REMARKS

Claim Rejections—35 USC §112

Claim 2 stands rejected under 35 USC §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention. Applicant traverses this rejection.

In the Office action the Examiner asserts that (2-propanol, (1,1'-((3-(dimethylamino)propyl)imino)bis- does not correspond with N-(3-dimethylaminopropyl)-N,N-diisopropanolamine. Per the attached entry for CAS Registry number 63469-23-8, it is clear that the two names do correspond with each other. In view of the forgoing, the Examiner is asked to reconsider this rejection.

In view of the amendments to claim 4, the Applicant requests reconsideration of the rejection.

Claim Rejections—35 USC § 102

Independent claim 1 stands rejected under 35 USC § 102(b) as being anticipated by each of Kinkelaar (5,668,191) and Thompson (6,008263). Applicant respectfully submits that the Examiner has not established *prima facie* anticipation because neither Kinkelaar nor Thompson discloses a reactive catalyst as is claimed in independent claim 1. To anticipate, a single prior art reference must disclose every element *as set forth in the claim. See e.g., Verdegaal Bros. v. Union Oil Co. of California,* 814 F.2nd 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Reactive catalysts are those that are chemically reacted during the curing process; they are consumed during the formation of a foam. *See, e.g.,* US 2006/0058405 A1 at [0003] and [0013]. The only amine catalysts taught by Kinkelaar and Thompson for catalyzing the reaction between an isocyanate and a polyol are bis(2-dimethylaminoethyl)ether (NIAX® catalyst A-1) and triethylene diamine (NIAX® catalyst A-33). *See, e.g.,* Kinkelaar at column 6, lines 44-53 and Tables 1, 2, and 3, and Thompson at column 10, lines 6-7, column 13, lines 31-32, column 14, line 53, and column 15, lines 36-42. These NIAX® catalysts, however, generally correspond with the JEFFCAT® catalysts ZF-22 and TD-33A respectively. Neither of these JEFFCAT® catalysts are reactive catalysts. *See, e.g.,* US 2006/0058405 A1 at [0013]- [0014] and [0019]. Because neither Kinkelaar nor Thompson teach a reactive catalyst as set forth in claim 1, the Examiner has not established *prima facie* anticipation for independent claim 1 and claims dependent thereon.

Under a similar analysis, new claims 16-29 are distinguished over each of Kinkelaar and Thompson.

Claim Rejections—35 USC §103(a)

Claim 2 stands rejected under 35 USC § 103(a) as being unpatentable over Kinkelaar and further view of Munzenberger (6,706,774). For at least the reasons stated above with respect to claim 1, the Examiner has not established *prima facie* obviousness of claim 2. Furthermore, the Examiner has not presented a convincing line of reasoning to support his assertion that merely because Munzenberger discloses JEFFCAT® ZF 10 to be a suitable catalyst in his application that it would also be a suitable catalyst for Kinkelaar's application.

Munzenberger discloses a two-component on-(construction) site rigid foam system that can be expelled from a container such as a two-component aerosol can to form a stable, non-liquid foam. *See, e.g.,* column 1, line 58-column 2, line 5, and column 4, lines 39-65. Rigid foams are typically highly cross-linked, at least in part due to the use of an isocyanate with a high functionality such as 4,4'-methylenedi(phenyl isocyante) (MDI), which Munzenberger uses in his example. Notably, Munzenberger also discloses at least two polyols in his example that are used to make rigid foams, Voranol RA 800 and Lupranol 3402, where Voranol RA 800 was specifically developed for rigid polyurethane foams and it provides autocatalytic activity, reducing catalyst requirements. *See* Attached Product Information Voranol RA 800. In fact, Munzenberger's polyol component must include a polyester polyol, an aminopolyol, and a halogen-containing polyol. *See, e.g.,* column 2, lines 6-21. Thus, Munzenberger's formulation, especially his choice of polyols, allows him to achieve a foam that is stable as when sprayed on an area at a construction site.

In contrast, Kinkelaar discloses a cold molded flexible polyurethane foam that is made via a one-shot process by reacting a polyol component with toluene diisocyanate (TDI) as the primary isocyanate. *See, e.g.,* Abstract, column 1, lines 30-35, column 3, lines 50-63, and examples. The process of one-shot cold molding has different challenges than the construction application of Munzenberger. For example, in the one-shot cold-molded process the reaction between the polyol component and isocyanate should occur in a relatively short time (e.g. a few minutes) to allow for high productivity, but this reaction cannot occur to rapidly or the reaction mixture will not be able to fill the mold. *See, e.g.,* Kinkelaar at column 2, lines 4-25.

Kinkelaar accomplishes his one-shot cold-molded process by using a specialized polyol component—the majority of the polyol used in his polyol component is a polyoxypropylene/polyoxyethylene random copolymer having a low primary hydroxyl content and an unsaturation of less than 0.02 meq/g. *Id.* This was unexpected because, per Kinkelaar, the use of low primary hydroxyl polyols tends to lead to foam collapse in cold molded foams. Column 2, lines 38-43.

Given the different needs required by Munzenberger's and Kinkelaar's applications and their use of different isocyanates and very different polyols, it is respectfully submitted that the Examiner has not provided evidence that one skilled in the art would have been motivated by the teachings of Munzenberger to use JEFFCAT® ZF 10 in Kinkelaar's application. This is especially true given that prior to the Applicants's work attempts to use reactive catalysts in molded foams resulted in foams having unacceptable physical properties for their intended use. *See, e.g.,* US 2006/0058405 A1 at [0003]. It is believed that the unacceptable physical properties in these foams is due to degradation of the foam by the reactive catalysts, which stay in the foam after formation. Thus, one skilled in the art might have expected a poor result in Kinkelaar's application as well.

The applicants, however, did use a reactive catalyst in molded foam applications and found, surprisingly, that foams made with reactive catalysts and polyols with a low level of unsaturation were good quality foams. *See, e.g.,* US 2006/0058405 A1 examples 1-3. Referring to Example 1, a foam made with a polyol having a higher level of unsaturation (Polyol A) and a blend of non-reactive catalysts had good physical properties. Changing the catalyst blend to a reactive catalyst blend (Example 2) resulted in a foam with poor physical properties. But when a reactive catalyst blend was used in conjunction with a polyol having a lower level of unsaturation (Polyol B), the physical properties of the foam were as good as the foam of Example 1.

In view of the lack of evidence presented by the Examiner and the results provided in the present application, it is submitted that for these additional reasons the Examiner has not established *prima facie* obviousness for claim 2. Under a similar analysis, it is submitted that new claims 16-29 are also not obvious over the cited art.

Conclusion

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully requests that the claims be allowed.

Oct 2, 2008
Date

Respectfully submitted,

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CAS REGISTRY NUMBER:
63469-23-8
EINECS No. 264-261-4
ECL Serial No. 2005-3-3333
INVENTORY NAME(S):
2-Propanol, 1,1'-[[3-(dimethylamino)propyl]imino]bis- (TSCA, NDSL, PICCS, ASIA-PAC, NZIoC)
1,1'-[[3-(Dimethylamino)propyl]imino]bispropan-2-ol (English, French, German) (NDSL, EINECS)
1,1'-[[3-(dimethylamino)propyl]imino]bispropane-2-ol (French) (EINECS)
1,1'-[[3-(dimetilamino)propil]imino]bispropan-2-ol (Spanish) (EINECS)
1,1'-[[3-(Dimethylamino)propyl]imino]bis-2-propanol (ECL)
AMINE, (N,N-DIMETHYLAMINOPROPYL)-BIS-(2-HYDROXYPROPYL) (PICCS)
OTHER NAME(S):
1,1'-[[3-(Dimethylamino)propyl]imino]bis(2-propanol)
1,1'-[[3-(Dimethylamino)propyl]imino]bis[2-propanol]
2-Propanol, 1,1'-(3-dimethylaminopropylimino)di-
DPA
Jeffcat DPA
N,N-Dimethyl-N',N'-bis(2-hydroxypropyl)-1,3-diaminopropane
N,N-Dimethyl-N',N'-di(2-hydroxypropyl)-1,3-propanediamine
N-(3-Dimethylaminopropyl)-N,N-diisopropanolamine
PC CAT NP 10
PE 4360
Texacat DPA
NEW ZEALAND CLASSIFICATION:
New Zealand Inventory of Chemicals, 2006.
Inventory Update Rule (IUR):
This chemical was reported under the TSCA Inventory Update Rule for the following reporting period(s):
1986, 1990, 1994, 1998.
FORMULA:
C11H26N2O2

Product Information

VORANOL RA 800

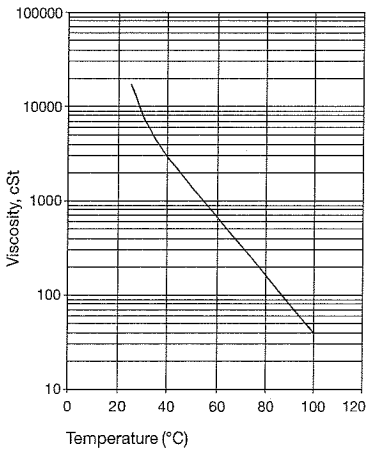
Polyol

Description

VORANOL™ RA 800 polyol is a highly reactive amine initiated polyether polyol, specially developed for the production of rigid polyurethane foams and designed for blending with other polyols.

VORANOL RA 800 polyol can be used in various rigid foam applications such as continuous lamination, rigid block production, (dis-) continuous panel production and pipe insulation.
VORANOL RA 800 polyol provides autocatalytic activity, reducing catalyst requirements. VORANOL RA 800 polyol can also be used in adhesives and casting applications as an auto-catalytic fast reactive polyol.

Viscosity vs. Temperature of VORANOL RA 800



Typical Properties	Units	Limits	Test Methods
Appearance / physical state		clear viscous liquid	
Hydroxyl number	mg KOH/g	780-820	ASTM D4274-94d
Water, max.	%	0.100	ASTM E203-96
Basicity	meq/g	3.4-3.7	DOWM 101485-TE94A
Colour, max.	Gardner	5	ASTM D4890-93
Specific gravity, 25/25°C		1.07	
Viscosity, 25°C	cSt	15000-19000	ASTM D445-94
Viscosity, 37.8°C	cSt	3550	ASTM D445-94
Flash point	°C	205	
CAS # [1]		26316-40-5	

[1] Please consult your Dow representative for more detailed information regarding regulatory status.

See "Handling and Storage" next page ☞

Form No. 109-50601-E-0306MJ
CH 381-114-E-0306